

GE Response to EPA September 3, 2010 Comments
Draft 2010 SEDC Work Plan for Sediment Sampling in CUs 9-16 & 19-30
Hudson River PCBs Site
September 7, 2010

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| Compilation of Agency Comments on GE's Draft 2010 SEDC Work Plan for Sediment Sampling in CUs 9-16 & 19-30 | | | | |
| General Comments | | | | |
| General Comment on Re-sampling Effort | 1 | General Comment Section 3, Page 11, Paragraph 1; Figure 5p | <p>The recommendation from the Peer Review Panel regarding re-sampling activities in order to better define the depth of contamination (DoC) in Phase 2 dredge areas was as follows:</p> <ul style="list-style-type: none"> • Low Confidence Cores: Repeat 100% of these cores • Missing Data: 100% collection in areas lacking data • High Confidence Cores (recommended): Repeat 20% of high confidence cores to validate elevation DoC elevations. <p>Section 3 states that “no re-sampling is proposed for any of the SSAP grab or abandoned locations in CUs 9 through 30”. These locations should be considered for re-sampling due to the lack of data in these areas; one location in particular is shown on Figure 5p on the west side of CUs 26 and 27, designated as low confidence, where only grab samples were collected.</p> <p>The rationale for choosing some data gap areas and not others is not apparent (see Figure 1, attached). GE should provide justification for the selection of data gap</p> | <p>GE has reviewed the grab and abandoned locations in CUs 9 – 16 and 19 – 30. Of the 21 grabs and abandoned locations, we would suggest re-sampling 3 of them. This information will be provided in the final Work Plan and will include GE's reasoning for not re-sampling at the other 18 locations.</p> <p>Regarding the area of grabs and abandoned locations near CUs 26 and 27, this area is adjacent to a hard rock outcrop and sampling throughout this area indicated a thin layer of sediment over bedrock. This has been confirmed with various lines of evidence, including side scan sonar, and extensive probing that was conducted in during the Phase 2 Dredge Area Delineation. GE does not feel that re-sampling at a location with just a thin layer of sediment over bedrock is a beneficial use of time for the field crew given the relatively short sampling season.</p> |

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| | | | <p>areas.</p> <p>Considering that these areas may only have a grab sample or have been abandoned due to the presence of wood debris, the alternate methods proposed by GE should be utilized in these areas. It is understood that some sample locations may not necessarily need to be re-sampled based upon the presence of bedrock, but these exclusions should be confirmed with EPA approval.</p> | <p>The missing data location indicated in EPA's Figure 1 will be added to the list of target locations. This is the only occurrence where the 80 ft grid was not honored and was an oversight on GE's part.</p> |
| 1 mg/kg TPCB vs. Tri+ PCB | 2 | Section 1.3, Page 2, Paragraph 1 | <p>The section states "...Phase 1 Residual Standard target of an average Tri+ PCB concentration of 1 mg/kg or less". The Residual Standard target for Phase 1 was 1 mg/kg Total PCB, not Tri+ PCB concentration. A residual of 1 mg/kg Tri+ PCB concentration was used within the Residual Standard as a remaining PCB concentration that was acceptable for backfill application.</p> <p>Page 179, Section 4.10.4 of the Phase 1 RAM QAPP states: The DoC is defined as the depth below which the residuals sampling data indicate that Total PCB concentration is \leq 1 mg/kg or the depth to bedrock or Glacial Lake Albany clay if those strata are encountered at a depth shallower than the depth to 1 mg/kg.</p> | <p>This is not a reference to depth of contamination, but a reference to the Phase 1 Residual Engineering Performance Standard (EPS) – which is 1 mg/kg Tri+ PCB, as indicated by the EPS and the Phase 1 Performance Standards Compliance Plan (PSCP).</p> |

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| | | | This section should be changed accordingly. | |
| Definition of High Confidence Core | 3 | General Comment | <p>GE should redefine the term “high confidence”.</p> <p>During future sampling efforts, including the 2010 SEDC program, the label “high confidence core” should only be applied to samples that contain two contiguous 6 inch segments with a Total PCB concentration less than 1 mg/kg.</p> | This issue is a data treatment and does not influence the Work Plan. GE does not agree with this comment and recommends it be discussed separately from the Work Plan. |
| Application of Elevation Based DoC to Prior SSAP Data | 4 | General Comment | <p>In order to easily compare datasets using different methods of vertical control (i.e., the SSAP data is often presented as depth below mud line rather than vertical elevation), all prior sediment sampling data would need to be converted to NAVD88 elevations. This could be accomplished utilizing historical water surface elevations from the USGS Ft. Edward hydrological gauge and water depth recorded at the time the sediment sample was collected.</p> <p>This effort would be necessitated per the Peer Review Panel’s recommendation that the DoC be based upon elevation rather than depth below mud line and EPA concurrence</p> | GE does not agree with this comment. The first step in dredge prism development was to interpolate Total PCB concentrations for different sediment layer intervals onto a 1-foot-by-1-foot grid. The DoC was set to the depth where the interpolated Total PCB concentration for a cell was less than 1 mg/kg. This depth was converted to elevation by subtracting it from a 1-foot-by-1-foot resolution multi-beam bathymetric surface. In this way, the design cores and design surface were assigned elevations using a current bathymetric surface. The contractor received a design |

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| | | | <p>to apply this method of vertical control to future sampling efforts (including the 2010 SEDC Sampling Program).</p> <p>No change to document needed for future discuss. No changes to this document are required; EPA would like to discuss this topic further with GE.</p> | <p>prism in elevation, not depth. While there was some uncertainty because sediment surface elevation was not recorded when the Sediment Sampling and Analysis Program (SSAP) cores were collected, we believe it to be insignificant. This is because comparisons of multi-beam bathymetric surfaces have shown that the river bathymetry most likely has not changed considerably between when the majority of the SSAP data were collected (2002 to 2004) and the 2005 bathymetry on which the surface elevations are based. There is no reason to go back to pre-2009 SSAP samples and reset their elevations using USGS gage data.</p> |
| Sampling in Areas within 20 feet of the Shoreline | 5 | General Comment | <p>EPA would like to discuss with GE extending the sampling grid to the river edge areas to enable the interpolation of the DoC at the edges of the grid. While these samples may not be used to set the removal elevations at the shoreline due to sediment stability concerns, the data are required to interpolate the DoC between 0 and 80 feet offshore. The sampling density should maintain the 80-foot on center triangular spacing required for the rest of the dredging</p> | <p>The existing 80 ft. on center sampling grid currently covers the entire river, bank to bank</p> |

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| | | | areas. The goal of the grid extension is to enable the interpolation of the DoC, not as a basis to decide the need for shoreline dredging. | |
| Expected Sediment Sample Depth | 6 | General Comment | <p>All core locations should be assigned an expected target depth based upon SSAP and other available information in the vicinity of the core location. Expected target depth should also be assigned to areas where data gaps exist, based upon sediment probing and existing DoC.</p> <p>Collected cores need to, at a minimum, be collected deeper than the expected depth. If samples are not collected below the expected depth, alternative sampling methods will be required (i.e., sonic drilling rig or other appropriate methods). As described in the work plan, samples should be collected to the full extent of the core tube or refusal.</p> <p>If the expected DoC is greater than 7 feet, then longer core tubes should be used and the previous SSAP procedure regarding splitting and transport of longer core tubes should be reinstated.</p> <p>EPA would like to discuss this topic further</p> | <p>GE is essentially planning to do this; field crews will have the DoC for existing cores available and will use this information to attempt to collect deeper cores. At confidence level 2D core locations, GE will target a recovery depth that is a minimum of 12 in. deeper than the existing cores last section.</p> <p>GE will reinstate the procedure to split longer core tubes before transport, if appropriate. Also, if GE occupies locations greater than 7 ft, we will use a core tubes greater than 8 ft.</p> |

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| | | | with GE. | |
| Utilization of Lexan Core Tubes | 7 | Appendix A, Core Sampling with Vibracore with Core Catcher and Nose Cone, Page 6, Item 2 | <p>When Lexan core tubes are utilized and deformation of the core tube occurs, an aluminum core tube or outer casing around the Lexan tube should be used.</p> <p>It is expected that core catchers can be used in either the Lexan or aluminum tubes.</p> <p>The current SOP in Appendix A only requires Lexan tubes when core catchers are utilized.</p> | Lexan core tubes will only be used in conjunction with core catchers and an outer aluminum casing. An inner and outer tube is needed in conjunction with a nose cone to keep the core catcher secure in the inner lexan tube. Standard vibracoring (without core catchers) will only use aluminum tubing. |
| Preventing Sediment Loss from Core Tube | 8 | Appendix A General Comment | <p>GE should utilize an approach when handling the core tube such that the core catcher and/or vibracorer shoe can be removed without loss of sediments from the core tube (i.e., cap or cover the bottom of the core tube prior to raising the bottom of the core tube above the water surface).</p> <p>Regardless of the method utilized, EPA expects that no sediment will be lost from the bottom of the core tube when removing the core tube from the water, including during the removal of the core catcher and/or vibracorer shoe.</p> | GE will follow procedures intended to minimize loss of sediment during sampling, and will clarify this in the SOP. |
| General Comment Regarding Core Location | 9 | General Comment | EPA expects to have additional comments regarding the locations selected for sampling. However, it is anticipated that the number of samples collected during the 2010 | GE provided updated sediment sampling locations to EPA on September 1, 2010, along with the approach used to select high |

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| Selection | | | SEDC Sampling Program will be agreed upon with GE. In particular, EPA's comments are expected to include which high confidence core locations will be re-sampled in order to provide the best information regarding the DoC. | confidence core re-sampling locations. GE needs EPA's review and approval of these maps before commencing sampling. |
| General Comment | 10 | General Comment | Please correct reference to GE Phase 1 Evaluation Report Figures. The 8.3-1 series presents the high and low confidence and missing data areas. The referenced figures, 8.1-3a through 8.1-3j do not exist; a single figure, 8.1-3, is an image of debris removal conducted in the 1970s. | Comment noted – correction will be made to the final Work Plan. |
| General Comment | 11 | General Comment | Matchlines should be added to all figures with the work plan. | Comment noted. |
| General Comment | 12 | General Comment | GE needs to evaluate the RAM QAPP and make any changes necessary as part of this sampling program. | This work is being performed pursuant the SSAP QAPP in order to re-define DoC. We have already evaluated the SSAP QAPP and made the appropriate modifications to the relevant SOPs. |
| Sampling Methodology and Approach | | | | |
| sRe-sampling High Confidence Core Locations | 13 | Section 1.1, Page 1, Paragraph 3 | The intention of sampling the high confidence areas is to evaluate the uncertainty in DoC measurements. The work plan states that only 10% of the locations designated as high confidence cores during | GE agrees to sample 20% of the high confidence locations. As previously mentioned, EPA needs to provide specific comments on the |

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| | | | <p>the SSAP in CUs 9-16 and 19 – 30 will be re-sampled during the 2010 SEDC Sediment Sampling Program. The recommendation from the Peer Review Panel stated that 20% of these locations should be re-sampled. EPA agrees with the Peer Review panel that 20% of the Level 1 A cores should be re-sampled.</p> <p>In addition, EPA's analysis of high confidence core locations shows that there is some uncertainty with the DoC delineation, even in high confidence core locations, when the DoC is relatively deep (i.e., greater than 2 feet). Therefore, while selecting Level 1 locations for re-sampling, GE should target areas where there is high variability in DoC measurements. These are typically locations where shallower DoC measurements are adjacent to deeper DoC measurements irrespective of the Confidence Level type.</p> <p>EPA requests further discussion with GE regarding this topic, including the Data Quality Objectives (DQOs) associated with re-sampling the high confidence areas.</p> | <p>proposed high confidence locations as soon as possible.</p> <p>GE does not agree that the high confidence re-sampling should be focused in areas with deeper DoCs. This effort should not be biased because it will be used to develop variograms. The current sampling locations proposed honors this existing DoC distribution.</p> |
| Recovery | 14 | Appendix A, Page 5, Step 11 | The Peer Review Panel recommends that 80% core recovery, rather than 60%, be used to determine the acceptability of a sediment sample. EPA concurs with this and | Per GE's comments to the Peer Review Panel on August 27, 2010, the SSAP data do not show a correlation to % recovery and probability of |

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| | | | recommends that 80% recovery be targeted in all sediment samples, regardless of the method utilized. | obtaining a complete core. However, in the effort to be responsive to the Peer Review Panel, GE will collect three cores at missing data locations and retain the one with the highest % recovery (field recovery depth/penetration), with the goal of obtaining 80%. But, a core with less than 80% recovery and greater than 60% recovery if it is the highest recovery of the three attempts will be retained. If a recovery of 80% or greater is obtained in one of the first two attempts, it will be retained and the crew will move on to the next sampling location. This procedure will be repeated at former incomplete core locations, with the exception that cores with recovery less than 60% will be retained if it meets the length requirements specified in Response no. 6 |
| Vertical Control | 15 | Section 3.4, Page 14 | <p>The language of this section implies that the river bed elevation for each sample collected during the 2010 SEDC Sediment Sampling Program will be obtained at a future point in time after collection.</p> <p>EPA would like to discuss possible options to</p> | GE has discussed this with their surveying contractor, and believes that the most accurate and efficient way to collect mudline elevation data is to have the surveyors reoccupy coring locations after the cores are collected. |

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| | | | <p>determine the core interval elevations, including:</p> <p><u>Option 1</u>: Having a GPS unit on the sampling vessel capable of determining vertical elevations to within a tenth of a foot and using that information to reference the core interval elevations.</p> <p><u>Option 2</u>: Install a data logger or use another method to obtain continuous readings of the water surface elevation (w.s.e) within the Thompson Island Pool (TIP) to within a tenth of a foot.</p> <p>The sampling crew would use the water surface elevation as the reference point for determining the core interval. The top of the core interval (i.e., the riverbed surface) would be measured prior to collecting the core using a stadia rod. The bottom of the core interval would be measured prior to extracting the sampling apparatus, using the reference marks on the vibracorer cable, or where rods are used (i.e., a sonic rig), a reference point can be made on the drill rods.</p> <p>It is recommended that a method be</p> | |

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| | | | <p>developed to determine the elevation of the bottom of the core tube at the time the sediment sample is collected. Attempting to re-occupy the same location after collecting the sediment sample may be difficult. Slopes can result in significant elevation differences, even when off-set by small increments.</p> <p>Additionally, elevation should be determined at each discrete sediment sample location attempted.</p> | |
| Sampling within Navigational Channel | 16 | General Comment | The Sampling Plan should include a requirement that sampling in the navigation channel should extend to the full, 14 foot depth of the canal at low water or deeper (if needed) to produce two 6 inch segments with less than 1 mg/kg Total PCB. | The goal of this sampling is to determine DoC. GE anticipates that the existing SOP will be sufficient to define DoC in these types of areas. |
| Selection of Pilot Test Areas | 17 | Section 2.1, Page 5 | The text in this section specifies that the ASMP locations were selected in areas dominated by grab samples or where woody debris was encountered, but this is not clear from the locations shown on Figure 2. The target SSAP locations shown on Figure 2 are divided into high, low, and no confidence cores, and grab samples. The locations are further divided into "classes" – i.e., rock encountered, wood encountered, low recovery, or none. Some SSAP locations have multiple classifications – e.g., wood | GE evaluated the available data and used our best judgment in selecting test locations; we are open to alternative locations for the testing. |

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| | | | encountered and low recovery. All selected locations for the ASMPT are classified as only as "low recovery" or have no classification at all (see summary in Table 1). None are specifically marked as encountering wood debris or rock. The purpose of the ASMPT is to evaluate the ability of alternate coring techniques to obtain samples in areas where woody debris and bedrock are encountered; the locations selected for the pilot test should be biased toward those areas. It is not evident from Figures 2a to 2e that this is the case. | |
| Missing Data Locations / SOP Modification | 18 | Section 3.3, Page 13, Paragraph 2 | <p>This section states:</p> <p>However, one key modification to the SOP (at missing data locations only) is that cores with recoveries less than 60% will not be retained for analysis. In these instances, coring may be reattempted using an alternative sampling technique, if appropriate. [emphasis added]</p> <p>Since the point of this program is to obtain and verify the DoC, an alternate method should be required rather than an option. It may be necessary to review these situations on a case-by-case basis with EPA to determine if extenuating circumstances</p> | <p>Alternative sampling methods will only be used at low confidence locations if:</p> <ol style="list-style-type: none"> 1. The test proves to be successful; and 2. Conditions are conducive to one of the alternative methods that are found to be successful. <p>GE will not re-sample using untested or unsuccessful methods nor will we sample at a location where conditions indicate that these alternative methods would most likely be unsuccessful.</p> |

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| | | | make attempting sample collection using an alternate method not feasible. | |
| Test Pits with Incremental Sampling | 19 | Section 2.3.5, Page 8 | <p>If the coring methods utilized as part of the 2010 SEDC Sampling Program are not effective at delineating the DoC, consideration should be given to alternate sampling methods. If the alternate methods are also unsuccessful, EPA will discuss with GE the use of test pit sampling during dredging to delineate the DoC.</p> <p>The existing approach outlined by GE needs further discussion. EPA suggests after the initial excavation, a core sample be collected and analyzed deeper than 1 foot. EPA would like to discuss this approach in the future if this method is expected to be utilized.</p> | Comment noted. If the alternative methods that are currently being tested are not successful, GE will discuss other alternatives with EPA. |
| Surface Sediment Sample Collection | 20 | General Comment | <p>GE attempted to collect 0-2 inch segment samples during Phase 1. GE was only able to obtain 5 of the 27 attempts made due to recovery issues; in part due to the limited depth the core tubes were pushed.</p> <p>GE should analyze a percentage of the 0-2 inch samples so that EPA and GE can begin addressing re-deposition effects that were a central concern of GE and were identified by the Peer Review Panel as needing further evaluation. This discussion should include</p> | This is not part of the objective of the 2010 SEDC Work Plan. GE acknowledges that the Peer Review has suggested such sampling in 2011 and is willing to discuss with EPA outside of this 2010 SEDC effort. |

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| | | | <p>Data Quality Objectives (DQOs).</p> <p>EPA and GE should discuss the locations where these samples should be obtained. Since the samples will be taken from currently proposed sampling locations, no additional sediment sampling would be necessary and the analysis would replace the 0 to 6 inch sample such that no additional sampling burden is placed upon GE.</p> <p>EPA would like to discuss further sampling for these parameters both inside and outside dredge boundary lines. That can occur outside the implementation of this plan but could be added on as an addendum to the plan.</p> | |
| Sampling Near Three Sisters Island Area (CUs 35 and 36) | 21 | General Comment | The area around Three Sisters Island is expected to be conducted at the start of Phase 2 Year 2. Therefore, EPA recommends that this area be sampled as part of the 2010 SEDC Sediment Sampling Program. | This area is beyond the geographic scope of the current Work Plan. GE will not be sampling this area in 2010. |
| Use of Core Catchers during Vibracoring in High Confidence, Low Confidence, and | 22 | Section 3.3, Page 13 | <p>When collecting samples using the vibracoring technique, the following basic procedure is suggested:</p> <p>1. Collect sample using standard SSAP vibracoring technique during first attempt. If less than 80% recovery is attained, continue</p> | GE recommends waiting for the results of the alternative methods sampling tests prior to modifying the SOP. GE will evaluate the data obtained during the 2010 sampling program, and will discuss with EPA the need to reoccupy locations using |

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| Data Gap Areas | | | <p>onto Step 2.</p> <p>2. Collect sample using vibracoring technique with a core catcher during second attempt. If less than 80% recovery is attained, continue onto Step 3.</p> <p>3. Collect sample using vibracoring technique with or without a core catcher, determined by the sampling crew. If less than 80% recovery is attained, further discussion would be necessary between EPA and GE to decide the subsequent step (i.e., use of alternative sampling methods).</p> <p>GE should also evaluate the usability of multiple core catchers; different designs may be more or less effective at retaining the samples within the core tube.</p> | <p>an alternative sampling technique. GE does agree that we will sample with a vibracore and a vibracore with a core catcher at the ten test locations prior to the sonic drilling so that the viability of the core catcher can be assessed as early as possible in the program.</p> |
| Reconsideration of Alternative Sampling Methods | 23 | Section 2.3, Page 6 General Comment | <p>Under the current 2010 SEDC Work Plan only two alternative sampling methods are proposed for testing: vibracoring with core catchers and sonic drilling.</p> <p>EPA requests that GE provide further information why the direct push/Geoprobe method is not one of the alternate technologies being tested.</p> | <p>GE does not recommend testing of direct push sampling technologies, including a geoprobe system. The nature of the woody debris in the sediment requires a sampling method that can essentially cut through the material. GE expects that a direct push system would not cut the material, and would push the debris either downward or to the side during</p> |

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| | | | EPA may require re-sampling at locations that do not result in high confidence cores (i.e., two 6 inch segments with less than 1 mg/kg TPCB, 80% core recovery). This requirement would extend to utilizing alternative sampling methods in order to obtain an acceptable sample. | penetration. This has been observed previously during use of Shelby tubes in the river. |
| Use of Core Catchers during Sonic Drilling | 24 | Section 2.4, Page 9 General Comment | The use of core catchers should not be limited to just vibracoring but should also extend to sonic drilling methods if necessary to obtain 80% recovery. | The sonic drilling contractor has been directed to assess the use of a variety of methods to retain sediment in the core barrel. |
| Sampling of GLAC | 25 | Section 3.5, Page 14 | The Phase 1 experience shows that the Glacial Lake Albany Clay (GLAC) surface was frequently misidentified during the SSAP. To assure that the GLAC surface is accurately identified, samples of the clay from each core used to define the GLAC elevation should be sent for grain size (hydrometer) and Atterberg limits testing. | The uncertainties in the elevation of clay are not due to misidentification in the core; it is related to estimating a surface of clay elevation over the river bed from point data. The current SOP for identifying GLAC is acceptable to set the depth to clay in the core. The occurrence of GLAC in a core profile is apparent and easily identified. The full 6 in. section below the clay section is already sent in for PCB measurements. GE is willing to archive an additional 12 in. of the clay in case that clay sample comes back with Total PCBs greater than 1 mg/kg. |

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| | | | | There is no benefit to conducting complicated geotechnical test to establish the depth to clay in these cores. |
| Low Confidence Cores Not to be Re-attempted | 26 | Table 2 | EPA does not agree with GE's decision not to re-attempt some of the Level 2 cores. Please see attached Table 1 for detailed responses. | GE does not agree with all of EPA's suggestions – see details in the attached Table 1. |
| Sampling Density | 27 | General Comment | All areas to be dredged must be sampled at a density of 8 cores/acre (80-ft centers), without exception. This requirement is based on the various statistical evaluations of Phase 1 coring data which showed much poorer DoC accuracy in the areas sampled at a density less than 80-ft spacing. Nearly all of GE's "no data" areas were in fact sampled at densities of 120 or 160 ft on center. | <p>The areas that are currently sampled at 160 ft centers were done so as screening level areas per the approved 2002 SSAP QAPP. Subsequent data gap sampling was focused, at EPA's approval, around existing dredge area boundaries. GE's current proposal will provide data on 80 ft spacing.</p> <p>We would like to note that EPA's statistical analysis mentioned in this comment has not yet been provided to GE after numerous requests.</p> |
| 6-inch Casing in Advance of Sonic Drilling | 28 | Section 2.4.2, Page 9 | The reason for setting a 6-inch casing prior to use of the sonic drilling rig is not apparent. Rationale for this step should be provided. | GE will provide additional rationale in the Work Plan. |
| Sample Processing and Data Management-Core Processing | 29 | Section 4.1, page 16 | Clarify the phrase "The procedures for processing the 2010 data gap and pilot test cores will generally follow the approved SSAP FSP, including the modifications in the USEPA approved Corrective Action Memorandums | GE stated the procedures "generally follow" the SSAP FSP because since the SSAP FSP was approved, the SOPs have been modified. All modifications to the FSP and SOPs |

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| | | | (CAMs).” Why is ‘generally’ used? Also, the specific CAMs and the resulting approved changes should be provided herein, either within this section or as an attachment. | have been captured in this Work Plan. GE will summarize the status of the various relevant CAMs in the Work Plan. |
| Laboratory Analysis | 30 | Section 4.3, Page 16 | Provide the specific CAMs and the resulting approved changes in the text or as an attachment to this work plan. Verify that NEA, Inc. is the only laboratory involved in analyzing sampling for this program. Recent updates to the laboratory information must be provided. This includes current lab certifications and current versions of all SOPs (including MDL determinations). Sample archiving details should be provided in this work plan | No CAMs exist relative to changes in analytical procedures. The text will be modified to delete reference to CAMs. All analytical procedures are documented in the project-specific or laboratory-specific SOPs. NEA is the only laboratory planned to be used for this program. SOPs that have been modified, if any, will be provided in the Work Plan. Current MDL and laboratory certifications will be included in the Work Plan for the applicable analytical methods. |
| Laboratory QA/QC | 31 | Section 4.4, pages 16-17 | The PE program (frequency / assessment / corrective actions) implemented here should be that followed in the RAMP QAPP. Provide the volume of PE sample remaining for PEs 18, 19, and 20, after utilization in the remedial action monitoring. How and when was the determination made | The defined PE program is identical to the program used during the SSAP. Insufficient PE samples remain for the frequency used during the RAMP. Sixty to 90 gram aliquots of the three PEs have been stored frozen (<-18 °C) since their production. The numbers |

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| | | | of the continued viability of the 3 PE samples prepared in March 2009, for use in this proposed SEDC activity? Were tests re-performed to verify each mean, which is the center of each 50%-150% control window? | <p>of remaining PEs are:</p> <ul style="list-style-type: none"> • PE18 – 11 • PE19 – 13 • PE20 – 14 <p>Recent analysis of each PE has been conducted by NEA during developmental evaluation of microwave extraction methods (not being used on this program) that confirms the viability of the PEs. Preparation, homogenization and development of new PE samples and control limits would significantly delay the start of this program.</p> |
| Exclusion of "TT" Samples | 27 | Section 3.1.1.2, Page 12, 4th Bullet | It is only acceptable to exclude a "TT" sample location from re-sampling if the DoC for the original core is set below 24 inches. | A "TT" sample was a re-sample of an existing high confidence location with a 2-24 in. section and a DoC at 24 inches. The goal of the TT re-sampling was to provide refinement of the existing high confidence core's 2-24 in. section. There is an adjacent high confidence core to this TT core – there is no reason to re-sample a TT core, even if it is low confidence. TT cores do not have a definitive confidence level because only the sections within the 0 – 24 in. interval were analyzed for PCBs. |

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| Interpretation of Data Results | | | | |
| Delineation of DoC | 33 | Section 1.4, Page 4, Paragraph 1 | <p>The objective of the ASMPT is to “provide a core that includes at least 6 inches of ‘clean’ sediments (less than 1 mg/kg Total PCB)”. EPA has recommended, as well as the Peer Review Panel, that two 6 inch segments (12 inches total) with a Total PCB concentration of less than 1 mg/kg be used to delineate the DoC.</p> <p>This requirement should also extend beyond the ASMPT and be applied to the additional Data Gap Sampling Program that will also occur during the 2010 SEDC Sediment Sampling Program, regardless of the method of sediment sampling employed.</p> <p>Where cores are collected without two contiguous 6 inch sediment less than 1 mg/kg Total PCB, EPA would review these on a case by case basis with GE and evaluate the need for possible additional data collection deeper than before.</p> | See response to comment 3. |
| Downward Contamination | 34 | Section 2.3.3, Page 7, Paragraph 3 | This problem can be mitigated by obtaining the sample from the center of the core segments. Also, use of a larger diameter corer would be helpful in this regard. | The potential for spreading contamination downward by core catchers will be evaluated during the ASMPT; recommendations for modifying the SOP will be developed as appropriate. |

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| Reporting | 35 | Section 6, Page 19 | <p>EPA requires that the submission of the memorandum detailing the results of the ASMPT should not be delayed until all of the data from the samples collected under this work plan. GE should submit the report on the ASMPT 45 days after the data from that program have been received from the lab. Standard 30 day turnaround should be required.</p> <p>GE should also be required to specify lab turnaround for the data from the data gap and re-sampling program as well, and be required to submit their report on this data collection effort within a reasonable time (30-45 days) after the last data are received from the lab.</p> | GE will discuss the results of the ASMPT as soon as possible and recommend changes to the existing SOP. A full report for the entire 2010 SEDC program will be provided 45 days from the receipt of the data from the lab. |

Appendix A – Sediment Core and Processing Standard Operating Procedure

| | | | | |
|-------------------|----|---|--|--|
| SOP Modifications | 36 | General Comment | GE needs to evaluate and update the current SOPs within Appendix A to reflect EPA's comments. | Comment noted. |
| Sediment Probing | 37 | Section 7 (App. A), Page 3, Step 3 Section 2.2 (Main Report), Page 5, Paragraph 1 | <p>Step 3 states: "...with the deepest penetration recorded" and "Record the approximate average sediment thickness..." These two statements are contradictory and clarification should be made.</p> <p>This determination has direct impact upon Step 1 of Core Sampling with Vibracore and</p> | The deepest probing depth will be recorded. The SOP will be updated accordingly. |

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|--|-----------|----------------------------|---|--|
| | | | the language in Section 2.2, Page 5, Paragraph 1 when deciding the length of the core tube to be used. | |
| Sectioning & Decanting Water from 8-foot Core Sample | 38 | General Comment | <p>Language should be included within all three methods that describes or mentions the procedure to be used when decanting surface water from the top of 8 foot core samples.</p> <p>Additionally, language should be included within all three methods that describes or mentions the procedure to be used when removing the excess portion of the core tube that does not contain sediment.</p> | Comment noted and the SOP will be updated accordingly. |
| Accuracy of Measurements | 39 | General Comment | All references to the precision of measurements taken during sediment sampling, regardless of the method, should be to the tenth of a foot (not whole feet). | Comment noted. It should be noted that the horizontal Global Positioning System precision is within a foot, not a tenth of a foot. |
| Additional Information Gathered | 40 | Section 7, Various Methods | <p>The field database that records the information gathered during sediment sampling should also record the offset of the actual sediment sample location in reference to the target location.</p> <p>In addition, the water surface elevation at the time the sample is collected should also be recorded in the field database.</p> | <p>Comment noted.</p> <p>Water depth will be recorded at the time of sampling. Water surface elevation can be estimated using elevation data from the USGS gage at Fort Edward and the time of sampling of the core.</p> |
| Logging and/or Transport of | 41 | Section 7, Page 7 | EPA would like to discuss with GE logging of the sediment samples when sonic drilling is | The core will not be logged on the drilling rig. Further clarification |

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|---------------------------------------|-----------|--|--|---|
| Sonic Drilling Cores | | | <p>utilized. Will the sediment sample be logged on the drilling rig?</p> <p>If the sediment sample is not logged at the time it is collected, please clarify how the sample will be handled and transported to the processing area to minimize disturbance so that accurate sediment strata can be logged (i.e., will a tray or tube be used to transport the 5-foot long sleeve?).</p> | regarding the sonic drill samples will be provided in the updated SOP. |
| Core Sample Handling – Sonic Drilling | 42 | Core Sample Handling, Section 7, Page 8, Step 2g | The sentence should be corrected to state “Label the tube with...” | Comment noted – the correction will be made to the SOP. |
| Core Sample Handling – Sonic Drilling | 43 | Core Sample Handling, Section 7, Page 8 | <p>Will the “sleeve” that is used during sonic drilling be a “hard sleeve” (i.e., a hard liner) or a “soft sleeve” (i.e., a poly bag)?</p> <p>GE should clarify if the “sleeve” that will hold the sample collected via sonic drilling will be within the core barrel itself or if the core sample will be extruded into the “sleeve” (i.e., a “soft sleeve”).</p> <p>Additionally, GE should verify that the bags used to hold the sample for transport (if used) to the processing facility will be made of phthalate free material.</p> | <p>The sleeve is a soft sleeve and the core will be extruded into the sleeve.</p> <p>GE will discuss with the contractor and the analytical laboratory the selection of the plastic sleeve material that will be used for core transport. The material and extrusion techniques will be such that the PCB measurement should not be impacted by presence of phthalates.</p> |
| Record Keeping | 44 | Section 9, Page 14, | EPA requests that a hard copy of the field log | Comment noted. |

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| Topic | Comment # | Section/Page/Paragraph | EPA Comment | GE Response |
|-------|-----------|------------------------|---|-------------|
| | | Paragraph 2 | generated at the completion of both sampling and processing activities be provided to the EPA field representative. | |

Table 1 – EPA Response to GE’s Table 2: Low Confidence Cores not to be Re-Attempted

| CU | Confidence Level | Existing Core | Stated Reason to Not Re-Attempt Location | EPA Response | GE Response |
|-------|------------------|----------------|---|---|---|
| CU-9 | Level 2E | RS1-9594-SL073 | Shoreline core; prism higher than DoC | Concur - shoreline core, DoC set at the extrapolated DoC | |
| CU-9 | Level 2A | RS1-9594-TT218 | Core collected to identify DoC < 24"; adjacent core has 24" DoC | Do not concur - need to know if the DoC there is deeper than 24" since the extrapolated DoC is 39" | A “TT” core was only measured in the 0-24 in. section to determine whether the DoC was less than 24 in., there is no need to re-sample a TT core because it has an adjacent high confidence core. |
| CU-10 | Level 2C | RS1-9493-WS603 | Clay core | Do not concur - Phase 1 showed that the depth to clay was underestimated in Phase 1 - need to re-sample this location | The depth to clay was uncertain in some areas due to the interpolation of point data to a continuous surface. The identification of clay within a core is easily performed during |

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| CU | Confidence Level | Existing Core | Stated Reason to Not Re-Attempt Location | EPA Response | GE Response |
|-------|------------------|----------------|---|--|---|
| | | | | | core processing – there is no need to re-sample clay cores. |
| CU-11 | Level 2A | RS1-9493-SL038 | Shoreline core; prism higher than DoC | Concur - current dredge prism depth is greater than 2 feet | |
| CU-11 | Level 2A | RS1-9493-TT217 | Core collected to identify DoC < 24"; adjacent core has 24" DoC | Do not concur - need to know if the DoC there is deeper than 24" since the extrapolated DoC is 34" | A "TT" core was only measured in the 0-24 in. section to determine whether the DoC was less than 24 in., there is no need to re-sample a TT core because it has an adjacent high confidence core. |
| CU-12 | Level 2D | RS1-9493-CS634 | Located 1ft from core RS1-9392-IN053 which will be re-attempted | Concur | |
| CU-12 | Level 2R | RS1-9493-SL044 | Shoreline core; prism higher than DoC | Do not concur - dredge prism depth is 1 ft. - core predicts a DoC of 18"- either re-sample or set the prism DoC to 18" | The DoC in this area was set using the approved methods and after numerous discussions with EPA during the July 2008 shoreline coring program analysis. GE agrees to re-sample |

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| CU | Confidence Level | Existing Core | Stated Reason to Not Re-Attempt Location | EPA Response | GE Response |
|-------|------------------|----------------|--|---|--|
| | | | | | this core because it is low confidence. |
| CU-12 | Level 2D | RS1-9493-SL047 | Shoreline core; prism higher than DoC | Do not concur - dredge prism depth is 1 ft. - core predicts a DoC of 18"- either re-sample or set the prism DoC to 18" | The DoC in this area was set using the approved methods and after numerous discussions with EPA during the July 2008 shoreline coring program analysis. GE agrees to re-sample this core because it is low confidence. |
| CU-12 | Level 2F | RS1-9493-WS111 | Adjacent Level 1A 'IN' core | Concur | |
| CU-13 | Level 2R | RS1-9493-CS644 | Adjacent Level 1A - 'IN' core | Concur | |
| CU-13 | Level 2E | RS1-9493-SL052 | Shoreline core; prism higher than DoC | Do not concur - dredge prism depth is 1.5 ft. - core predicts a DoC of 56" - either re-sample or set the prism DoC to 24" | The DoC in this area was set using the approved methods and after numerous discussions with EPA during the July 2008 shoreline coring program analysis. GE agrees to re-sample this core because it is low confidence. |
| CU-13 | Level 2F | RS1-9493-SL056 | Shoreline core; prism | Do not concur - | The DoC in this area |

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| CU | Confidence Level | Existing Core | Stated Reason to Not Re-Attempt Location | EPA Response | GE Response |
|-------|------------------|----------------|---|---|---|
| | | | higher than DoC; bottom segment 1.1 ppm | dredge prism depth is 1.5 ft. - core predicts a DoC of 48" - either re-sample or set the prism DoC to 24" | was set using the approved methods and after numerous discussions with EPA during the July 2008 shoreline coring program analysis. GE agrees to re-sample this core because it is low confidence. |
| CU-14 | Level 2A | RS1-9493-AR071 | Located 4ft from core RS1-9392-WS651 which will be re-attempted | Concur | |
| CU-14 | Level 2F | RS1-9493-SL059 | Located 5ft from core RS1-9392-SL060 which will be re-attempted | Concur | |
| CU-19 | Level 2F | RS1-9493-IN109 | Located 1ft from core RS1-9392-WT225 which will be re-attempted | Concur | |
| CU-24 | Level 2D | RS1-9392-IN045 | Located 3ft from core RS1-9392-CT194 which will be re-attempted | Concur | |
| CU-27 | Level 2R | RS1-9392-AB074 | Location has been attempted twice; coring limited by | Concur | |

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| CU | Confidence Level | Existing Core | Stated Reason to Not Re-Attempt Location | EPA Response | GE Response |
|-------|------------------|----------------|---|---|--|
| | | | bedrock | | |
| CU-28 | Level 2D | RS1-9392-WT298 | Located 1ft from core RS1-9392-IN085 which will be re-attempted | Concur | |
| CU-28 | Level 2D | RS1-9392-WT304 | Located 1ft from core RS1-9392-IN088 which will be re-attempted | Concur | |
| CU-28 | Level 2D | RS1-9392-WT321 | Located 5ft from core RS1-9392-IN093 which will be re-attempted | Concurrence undetermined - target location for core RS1-9392-IN093 is not included in Table 1 | GE will review and provide information in updated Work Plan. |
| CU-28 | Level 2F | RS1-9392-WT326 | Located 4ft from core RS1-9392-IN095 which will be re-attempted | Concur | |
| CU-29 | Level 2D | RS1-9392-WT709 | Located 5ft from core RS1-9392-IN102 which will be re-attempted | Concur | |

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Table 2 – Summary of ASMPT Locations

| ASMPT Location | SSAP Core Type | Core "Class" ¹ | Approximate Dredge Depth (inches) |
|-----------------------|-----------------------|----------------------------------|--|
| CU 11 | Low Confidence | Low Recovery | 18-24 |
| CU 12 | Low Confidence | Low Recovery | 24-30 |
| CU 14 | Low Confidence | None | 30-36 |
| CU 15 | No Confidence | None | 36-48 |
| CU 24 | Low Confidence | Low Recovery | 48-60 |
| CU 25 | No Confidence | Low Recovery | 18-24 |
| CU 27 | Low Confidence | Low Recovery | 48-60 |
| CU 28 | No Confidence | Low Recovery | 30-36 |
| CU 43 | No Confidence | Low Recovery | 30-36 |
| CU 46 | No Confidence | Low Recovery | 18-24 |

Notes:

¹ Figure 2 assigns a "class" to each core, i.e., rock encountered, wood encountered, or low recovery.